

Work Order ID 66967

Thursday, March 03, 2011 8:58:58 AM



Page 1

Item ID: D6101-007

Revision ID:

Item Name: Saddle Billet

Start Date: 3/3/2011 Start Qty: 30.00

Required Date: 3/16/2011 Req'd Qty: 30.00

Reference:

Accept



Setup Start



Stop



Cust Item ID:

Customer:

Approvals: Process Plan: CY

Date: 11/03/03

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|----------|--------------|
|----------|--------------|

| | |
|-------|-------|
| D6101 | Rev B |
|-------|-------|

100



Purchasing

PURCHASING

0.00

Memo

0.00

Issue P/O:

13604

a) Description: Alluminum billet

b) 7.750" x 8.250" x 2.50" thick

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Grain direction along 7.750" length

e) Material: 7075-T7351 (QQ-A-250/12)

f) Material certification required

CY 11/03/03 30

110



Packaging

Receive & Inspect for Damage & Mat'l Certs

0.00

Memo

0.00

Ensure material certification is attached

P4/3/02 (10)

Work Order ID 66967

Thursday, March 03, 2011 8:58:58 AM



Page 2

Item ID: D6101-007

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet

Start Date: 3/3/2011 Start Qty: 30.00



Cust Item ID:

Required Date: 3/16/2011 Req'd Qty: 30.00

Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|-----------------------------------|---|----------------------|---------|-----------|--------------|------------------------------|---------------|------------------|----------------|
| 120 QC Quality Control | QC6- Inspect dimensions to graving Memo Ensure Material certification comply to Dwg D6101 | 0.00 0.00 | | ✓ 11/3/29 | | 20 | | | |
| 130 Packaging Packaging | Identify as per dwg & Stock Location: <u>CNC</u> Memo | 0.00 0.00 | | ✓ 11/3/29 | | 40 | | | |
| 140 QC Quality Control | QC21- Final Inspection - Work Order Release Memo | 0.00 0.00 | | | | ✓ 11/03/29 MF 11-03-29 | | | |

Picklist Print

Page 1

Thursday, March 03, 2011 8:58:55 AM

Work Order ID: 66967

Parent Item: D6101-007

Parent Item Name: Saddle Billet





Start Date: 3/3/2011

Required Date: 3/16/2011

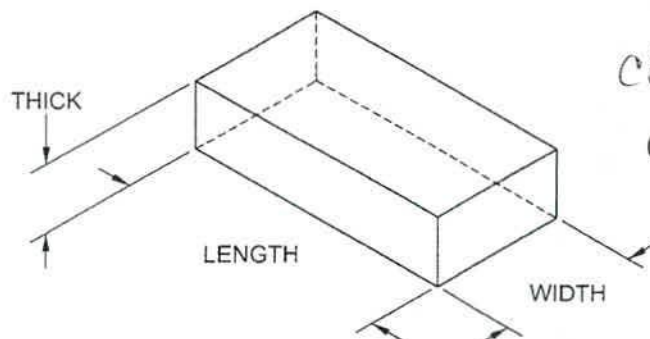
Start Qty: 30.00

Required Qty: 30.00

Comments: IPP A: 01.05.04 New Issue EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--|--------------|---------------|----------------|--------|
| D6101-007P  7075-T7351 8.25X7.75X2.5 | | Purchased | No | | | 110 | Each | 0.0000 | 1  | 30 | | 4/3/22 (10) | |

SPECIFICATION CONTROL DRAWING



CZ11103103
W10: 66967

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

| Part No. | Alloy | Length | Width | Thick | Grain Direction |
|---|--------------------------|--------|-------|-------|--------------------|
| D6101-001 | 7075-T7351 (QQ-A-250/12) | 6.000 | 6.250 | 2.000 | Along 6.000 Length |
| D6101-003 | 7075-T7351 (QQ-A-250/12) | 7.875 | 6.250 | 2.000 | Along 7.875 Length |
| D6101-005 | 7075-T7351 (QQ-A-250/12) | 5.000 | 8.250 | 2.500 | Along 5.000 Length |
| B D6101-007 | 7075-T7351 (QQ-A-250/12) | 7.750 | 8.250 | 2.500 | Along 7.750 Length |
| D6101-009 | 7075-T7351 (QQ-A-250/12) | 8.700 | 8.250 | 2.500 | Along 8.700 Length |
| D6101-011 | 7075-T7351 (QQ-A-250/12) | 9.700 | 8.250 | 2.500 | Along 9.700 Length |
| D6101-013 | 7075-T7351 (QQ-A-250/12) | 10.100 | 8.250 | 2.500 | Along 10.10 Length |
| D6101-015 | 7075-T7351 (QQ-A-250/12) | 9.450 | 6.250 | 2.500 | Along 9.450 Length |
| D6101-017 | 7075-T7351 (QQ-A-250/12) | 6.350 | 6.250 | 2.250 | Along 6.350 Length |
| | | | | | |
| | | | | | |

RELEASED

| | | | |
|------------|-------------------------------------|--|--------------|
| B | ADDED D6101-015/-017, ADD ASTM B209 | RF | 09.04.23 |
| A | NEW ISSUE | CP | 01.03.30 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | CP | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | <i>[Signature]</i> | DRAWING NO. | REV. B |
| MFG. APPR. | <i>[Signature]</i> | D6101 | SHEET 1 OF 1 |
| APPROVED | <i>[Signature]</i> | TITLE | SCALE |
| DE APPR. | <i>[Signature]</i> | SADDLE BILLET, 7075 | NTS |
| DATE | 09.04.23 | COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> | |

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:734296

| | | | | | | | |
|---|---------------|---|--|--|--|--|--|
| Expédié de / Ship From: | | Vendu à / Sold To: | | Expédié à / Ship To: | | Livré à / Deliver To: | |
| Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2 | | DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 | | WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 | | WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA | |
| Date d'expédition / Date Shipped | F.O.B. | Modalités de transport / Freight Terms | | Transporteur / Carrier | | N° du Bon de connaissance / BOL No | |
| 21-MAR-11 | ORIGIN | Prepaid | | MANITOULIN | | 734296-2 | |

| | |
|--|--|
| Détails d'expédition / Shipment Details | Destination finale / Final Destination Branch - MON |
|--|--|

| | | | | |
|--|------------------------|---------------------------------|---|-------------------------------|
| N° de commande / Order No | N° de ligne Line No | N° d'article / Item No | Description | |
| 1321513 | 3 | 752241.MO | 2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 8.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) X 7.75 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.75")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12 | |
| N° de bon de commande / Purchase Order No | | Nbre de pièces / Part Number | Qté commandée / Ordered Qty | Qté Facturée / Invoice Qty |
| 13604 | | YOUR ITEM NUMBER: D6101-007 | 10 PCS | 10 PCS |

| | | | | | | | |
|--|---------------------|---------------------------------------|-------------------------------|-------------------------|--|--|--|
| Détails / Details | | SHIP AS SOON AS REC'D | | | | | |
| N° de livraison / Delivery No : | Usine / Mill | N° de coulée / Heat Number | Code méc / Mech Id | Pièces / PCS | Largeur (Pouce)/ Width (IN) | Longueur (Pouce)/ Length (IN) | Qté expédiée/ Shipped Qty (LBS) |
| 72897311 | | 479610A8 | | 10 | | | 165.32 |

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned



Castle Metals®

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 2 of 2

| | |
|--|-------|
| for credit. | |
| Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative: | Date: |

| |
|---|
| SHIP TO: CASTLE % CASTLE AEROSPACE 3050 SOUTH HYDRAULIC WICHITA, KS 67216 |
| SOLD TO: CAS AERO%AM CASTLE METALS ATTN: BOB OHR %ACCTS PAYABLES 3400 NORTH WOLF ROAD FRANKLIN PARK, IL 60131 |

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4172642

| | | | | | | |
|------------------------------|--------------------------|---|-------------------------------|------------------------------|-----------------------|-------------------------------------|
| CUSTOMER PO NUMBER: 15132 | WORK PACKAGE: | CUSTOMER PART NUMBER: 6879 AMC A97075-60 | SHIP RUN/LOAD ID: 101636/5 | GOV'T CONTRACT NUMBER: | | |
| KAISER ORDER NO: 1087324 | LINE ITEM: 1 | SHIP DATE: 29-SEP-2009 | ALLOY: 7075 | CLAD: BARE | TEMPER: T7351 | PRODUCT DESCRIPTION: Sawed Plate |
| WEIGHT SHIPPED: 44926 LB | QUANTITY: 25 PCS EST. | B/L NUMBER: 2024216 | GAUGE: 2.5000 IN | DIAMETER/WIDTH: 48.500 IN | LENGTH: 144.500 IN | |

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG/Amd1

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevS
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 479610A8 Cast 268

Drop 21

Ingot 2

(ASTM E8/B557)
(EN 2002-1)

| | | | | | |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
| | T7351 | LT / 2 (Min:Max) | 70.7 : 71.3 (487 : 492) | 59.1 : 59.5 (407 : 410) | 11.2 : 11.6 |

(ASTM E1004)
(EN 2004-1)
Conductivity %IACS : 41.6 Min 42.0 Max
(MS/M) : 24.1 Min 24.4 Max

(ASTM E1251)

| | | | | | | | | | | | |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
| Actual | 0.09 | 0.18 | 1.6 | 0.03 | 2.4 | 0.20 | 5.8 | 0.04 | 0.01 | 0.01 | TOT 0.05 |

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4172642

Lot: 479709A8 Cast 268

Drop 10

Ingot 2

(ASTM E8/B557)
(EN 2002-1)Tensile: Temper
T7351Dir / # Tests
LT / 2 (Min:Max)Ultimate KSI (MPA)
71.5 : 71.9
(493 : 496)Yield KSI (MPA)
59.8 : 60.2
(412 : 415)Elongation %
10.7 : 10.8(ASTM E1004)
(EN 2004-1)Conductivity %IACS :
(MS/M) :40.8 Min
23.7 Min41.3 Max
24.0 Max

(ASTM E1251)

Chemistry:

Actual

SI
0.10FE
0.20CU
1.5MN
0.04MG
2.4CR
0.20ZN
5.6TI
0.03V
0.01ZR
0.01

TOT

OTHER
0.05

Lot: 479742A9 Cast 271

Drop 09

Ingot 4

(ASTM E8/B557)
(EN 2002-1)Tensile: Temper
T7351Dir / # Tests
LT / 2 (Min:Max)Ultimate KSI (MPA)
69.4 : 74.8
(479 : 516)Yield KSI (MPA)
56.4 : 63.9
(389 : 441)Elongation %
11.1 : 11.7(ASTM E1004)
(EN 2004-1)Conductivity %IACS :
(MS/M) :38.3 Min
22.2 Min40.9 Max
23.7 Max

(ASTM E1251)

Chemistry:

Actual

SI
0.10FE
0.20CU
1.5MN
0.04MG
2.5CR
0.19ZN
5.6TI
0.03V
0.01ZR
0.02

TOT

OTHER
0.05

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4172642

Lot: 485604A3 Cast 271

Drop 23

Ingot 2

(ASTM E8/B557)
(EN 2002-1)Tensile: Temper
T7351Dir / # Tests
LT / 2 (Min:Max)Ultimate KSI (MPA)
71.8 : 72.0
(495 : 496)Yield KSI (MPA)
59.9 : 60.4
(413 : 416)Elongation %
10.6 : 10.9(ASTM E1004)
(EN 2004-1)Conductivity %IACS :
(MS/M) : 41.3 Min
24.0 Min41.3 Max
24.0 Max

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual | 0.11 | 0.21 | 1.5 | 0.04 | 2.5 | 0.20 | 5.6 | 0.04 | 0.01 | 0.01 | TOT 0.05 |

Lot: 485622A5 Cast 271

Drop 19

Ingot 2

(ASTM E8/B557)
(EN 2002-1)Tensile: Temper
T7351Dir / # Tests
LT / 2 (Min:Max)Ultimate KSI (MPA)
70.9 : 71.0
(489 : 490)Yield KSI (MPA)
59.1 : 59.5
(407 : 410)Elongation %
11.3 : 11.3(ASTM E1004)
(EN 2004-1)Conductivity %IACS :
(MS/M) : 40.6 Min
23.5 Min41.9 Max
24.3 Max

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual | 0.10 | 0.21 | 1.5 | 0.04 | 2.4 | 0.19 | 5.5 | 0.04 | 0.01 | 0.01 | TOT 0.05 |

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4172642

Lot: 485626A6 Cast 271

Drop 23

Ingot 3

(ASTM E8/B557)

(EN 2002-1)

| | | | | | |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
| | T7351 | LT / 2 (Min:Max) | 71.2 : 71.8 (491 : 495) | 59.4 : 60.1 (410 : 414) | 10.1 : 11.0 |

(ASTM E1004)

(EN 2004-1)

| | | |
|----------------------|----------|----------|
| Conductivity %IACS : | 41.3 Min | 41.4 Max |
| (MS/M) : | 24.0 Min | 24.0 Max |

(ASTM E1251)

| | | | | | | | | | | | |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
| Actual | 0.11 | 0.21 | 1.5 | 0.04 | 2.5 | 0.20 | 5.6 | 0.04 | 0.01 | 0.01 | TOT 0.05 |

Lot: 485646A4 Cast 271

Drop 29

Ingot 2

(ASTM E8/B557)

(EN 2002-1)

| | | | | | |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
| | T7351 | LT / 2 (Min:Max) | 70.9 : 74.0 (489 : 510) | 59.4 : 63.4 (410 : 437) | 11.3 : 11.7 |

(ASTM E1004)

(EN 2004-1)

| | | |
|----------------------|----------|----------|
| Conductivity %IACS : | 39.1 Min | 41.6 Max |
| (MS/M) : | 22.7 Min | 24.1 Max |

(ASTM E1251)

| | | | | | | | | | | | |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
| Actual | 0.09 | 0.18 | 1.4 | 0.04 | 2.4 | 0.20 | 5.7 | 0.03 | 0.01 | 0.01 | TOT 0.05 |

ALLOY LIMITS

| | | | | | | | | | | | | |
|------------|------|------|-----|------|-----|------|-----|------|------|------|-------|------|
| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER | MAX |
| 7075 MIN | 0.00 | 0.00 | 1.2 | 0.00 | 2.1 | 0.18 | 5.1 | 0.00 | 0.00 | 0.00 | EACH | 0.05 |
| MAX | 0.40 | 0.50 | 2.0 | 0.30 | 2.9 | 0.28 | 6.1 | 0.20 | 0.05 | 0.05 | TOT | 0.15 |

Aluminum Remainder

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4172642

TEST NOTES

7075-T7351 plate 3.501-4.000" thick, if
ultrasonically inspected, meets requirements of CMMPO25 per
SDR CMMPO25-KaiserT-3. 7075-T7351 plate 4.001-5.000" thick,
if ultrasonically inspected, meets requirements of CMMPO25
per
SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR



SHIP TO:

CASTLE % CASTLE AEROSPACE
3050 SOUTH HYDRAULIC
WICHITA, KS 67216

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4172609

SOLD TO:

CAS AERO%AM CASTLE METALS
ATTN: BOB OHR %ACCTS PAYABLES
3400 NORTH WOLF ROAD
FRANKLIN PARK, IL 60131

| | | | | | | | |
|------------------------------|--------------------------|---------------------------|---|---------------------|--------------------------------|-------------------------------------|-----------------------|
| CUSTOMER PO NUMBER: 15127 | | WORK PACKAGE: | CUSTOMER PART NUMBER: 6857 AMC A97075-60 | | SHIP RUN/LOAD ID: 101635/14 | GOV'T CONTRACT NUMBER: | |
| KAISER ORDER NO: 1087317 | LINE ITEM: 1 | SHIP DATE: 28-SEP-2009 | ALLOY: 7075 | CLAD: BARE | TEMPER: T7351 | PRODUCT DESCRIPTION: Sawed Plate | |
| WEIGHT SHIPPED: 38880 LB | QUANTITY: 27 PCS EST. | B/L NUMBER: 2024208 | | GAUGE: 2.0000 IN | | DIAMETER/WIDTH: 48.500 IN | LENGTH: 144.500 IN |

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG/Amd1

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevS
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 479523A3 Cast 271

Drop 04

Ingot 2

(ASTM E8/B557)
(EN 2002-1)

| | | | | | |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
| | T7351 | LT / 2 (Min:Max) | 72.2 : 72.2 (498 : 498) | 60.3 : 60.6 (416 : 418) | 12.1 : 12.5 |

(ASTM E1004)
(EN 2004-1)

| | | |
|----------------------|----------|----------|
| Conductivity %IACS : | 41.1 Min | 41.9 Max |
| (MS/M) : | 23.8 Min | 24.3 Max |

(ASTM E1251)

| | | | | | | | | | | | |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
| Actual | 0.09 | 0.16 | 1.5 | 0.03 | 2.3 | 0.20 | 5.8 | 0.04 | 0.01 | 0.01 | TOT 0.05 |

**TEST REPORTS AND
DATA CONFIRMED**



**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4172609

Lot: 479578A7 Cast 268

Drop 20

Ingot 2

(ASTM E8/B557)
(EN 2002-1)

| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| | T7351 | LT / 2 (Min:Max) | 71.8 : 72.6 (495 : 501) | 60.5 : 61.7 (417 : 425) | 12.1 : 12.4 |

(ASTM E1004)

(EN 2004-1)

| | | |
|----------------------|----------|----------|
| Conductivity %IACS : | 40.4 Min | 40.5 Max |
| (MS/M) : | 23.4 Min | 23.5 Max |

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual | 0.10 | 0.18 | 1.6 | 0.03 | 2.5 | 0.19 | 5.7 | 0.03 | 0.01 | 0.02 | TOT 0.05 |

Lot: 479736A1 Cast 271

Drop 04

Ingot 4

(ASTM E8/B557)
(EN 2002-1)

| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| | T7351 | LT / 2 (Min:Max) | 72.0 : 72.5 (496 : 500) | 60.5 : 60.5 (417 : 417) | 12.3 : 13.3 |

(ASTM E1004)

(EN 2004-1)

| | | |
|----------------------|----------|----------|
| Conductivity %IACS : | 40.9 Min | 41.2 Max |
| (MS/M) : | 23.7 Min | 23.9 Max |

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual | 0.09 | 0.16 | 1.5 | 0.03 | 2.3 | 0.20 | 5.8 | 0.04 | 0.01 | 0.01 | TOT 0.05 |

**KAISER
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Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4172609

Lot: 485637A3 Cast 271 Drop 28 Ingot 4

(ASTM E8/B557)

(EN 2002-1)

| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| | T7351 | LT / 2 (Min:Max) | 72.3 : 73.3 (499 : 505) | 61.7 : 63.0 (425 : 434) | 11.9 : 12.2 |

(ASTM E1004)

(EN 2004-1)

| Conductivity %IACS : | 40.7 Min | 41.5 Max |
|----------------------|----------|----------|
| (MS/M) : | 23.6 Min | 24.1 Max |

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual | 0.09 | 0.18 | 1.5 | 0.05 | 2.3 | 0.21 | 5.7 | 0.03 | 0.01 | 0.01 | TOT 0.05 |

Lot: 485640A7 Cast 271 Drop 28 Ingot 1

(ASTM E8/B557)

(EN 2002-1)

| Tensile: | Temper | Dir / # Tests | Ultimate KSI (MPA) | Yield KSI (MPA) | Elongation % |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| | T7351 | LT / 2 (Min:Max) | 73.4 : 73.5 (506 : 507) | 61.9 : 62.3 (427 : 430) | 11.7 : 12.4 |

(ASTM E1004)

(EN 2004-1)

| Conductivity %IACS : | 40.4 Min | 41.5 Max |
|----------------------|----------|----------|
| (MS/M) : | 23.4 Min | 24.1 Max |

(ASTM E1251)

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER |
|------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual | 0.09 | 0.18 | 1.5 | 0.05 | 2.3 | 0.21 | 5.7 | 0.03 | 0.01 | 0.01 | TOT 0.05 |

ALLOY LIMITS

| Chemistry: | SI | FE | CU | MN | MG | CR | ZN | TI | V | ZR | OTHER | MAX |
|------------|------|------|-----|------|-----|------|-----|------|------|------|-------|------|
| 7075 MIN | 0.00 | 0.00 | 1.2 | 0.00 | 2.1 | 0.18 | 5.1 | 0.00 | 0.00 | 0.00 | EACH | 0.05 |
| MAX | 0.40 | 0.50 | 2.0 | 0.30 | 2.9 | 0.28 | 6.1 | 0.20 | 0.05 | 0.05 | TOT | 0.15 |

Aluminum Remainder

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4172609

TEST NOTES

7075-T7351 plate 3.501-4.000" thick, if
ultrasonically inspected, meets requirements of CMMP025 per
SDR CMMP025-KaiserT-3. 7075-T7351 plate 4.001-5.000" thick,
if ultrasonically inspected, meets requirements of CMMP025
per
SDR CMMP025-KaiserT-2.

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

